

# Bay Area Air Quality Management District

939 Ellis Street  
San Francisco, CA 94109  
(415) 771-6000

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**Final**

## MAJOR FACILITY REVIEW PERMIT

Issued To:

**City Of Santa Clara, Electric Department  
Facility #A0621**

**Facility Address:**

524 Robert Avenue  
Santa Clara, CA 95050

**Mailing Address:**

1500 Warburton Avenue  
Santa Clara, CA 95050

**Responsible Official**

Jennifer Sparacino, City Manager  
(408) 984-3101

**Facility Contact**

William J. Reichmann  
(408) 261-5227

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**Type of Facility:** Cogeneration Facility  
**Primary SIC:** 4911  
**Product:** Electric Power and Process Steam

**BAAQMD Permit Division Contact:**  
Robert T. Hull

**ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Signed by Peter Hess for Ellen Garvey  
Ellen Garvey, Executive Officer/Air Pollution Control Officer

March 22, 2000  
Date

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## I. STANDARD CONDITIONS

### A. Administrative Requirements

The permit holder shall comply with all applicable requirements in the following regulations:

BAAQMD Regulation 1 - General Provisions and Definitions

(as amended by the District Board on 10/7/98);

SIP Regulation 1 - General Provisions and Definitions

(as approved by EPA through 8/27/99);

BAAQMD Regulation 2, Rule 1 - Permits, General Requirements

(as amended by the District Board on 10/7/98);

SIP Regulation 2, Rule 1 - Permits, General Requirements

(as approved by EPA through 2/25/99);

BAAQMD Regulation 2, Rule 2 - Permits, New Source Review

(as amended by the District Board on 10/7/98);

SIP Regulation 2, Rule 2 - Permits, New Source Review and Prevention of Significant Deterioration

(as approved by EPA through 2/25/99);

BAAQMD Regulation 2, Rule 4 - Permits, Emissions Banking

(as amended by the District Board on 10/7/98); and

SIP Regulation 2, Rule 4 - Permits, Emissions Banking

(as approved by EPA through 2/25/99).

BAAQMD Regulation 2, Rule 6 - Permits, Major Facility Review

(as amended by the District Board on 10/20/99).

### B. Conditions to Implement Regulation 2, Rule 6, Major Facility Review

1. This Major Facility Review Permit was issued on March 22, 2000 and expires on February 28, 2005. The permit holder shall submit a complete application for renewal of this Major Facility Review Permit no later than August 31, 2004 and no earlier than February 28, 2004. **If a complete application for renewal has not been submitted in accordance with these deadlines, the facility may not operate after February 28, 2005.** (Regulation 2-6-307, 404.2, & 409.6; MOP Volume II, Part 3, §4.2)
2. The permit holder shall comply with all conditions of this permit. The permit consists of this document and all appendices. Any non-compliance with the terms and conditions of this permit will constitute a violation of the law and will be grounds for enforcement action; permit termination, revocation and re-issuance, or modification; or denial of a permit renewal application. (Regulation 2-6-307; MOP Volume II, Part 3, §4.11)
3. In the event any enforcement action is brought as a result of a violation of any term or condition of this permit, the fact that it would have been necessary for the permittee to halt or reduce the permitted activity in order to maintain compliance with such term or condition shall not be a defense to such enforcement action. (MOP Volume II, Part 3, §4.11)
4. This permit may be modified, revoked, reopened and reissued, or terminated for

cause. (Regulation 2-6-307, 409.8, 415; MOP Volume II, Part 3, §4.11)

## **I. Standard Conditions**

5. The filing of a request by the facility for a permit modification, revocation and re-issuance, or termination, or of a notification of planned changes or anticipated non-compliance does not stay the applicability of any permit condition. (Regulation 2-6-409.7; MOP Volume II, Part 3, §4.11)
6. This permit does not convey any property rights of any sort, nor any exclusive privilege. (Regulation 2-6-409.7; MOP Volume II, Part 3, §4.11)
7. The permit holder shall supply within 30 days any information that the District requests in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. (Regulation 1-441, Regulation 2-6-409.4 & 501; MOP Volume II, Part 3, §4.11)
8. Any records required to be maintained pursuant to this permit which the permittee considers to contain proprietary or trade secret information shall be prominently designated as such. Copies of any such proprietary or trade secret information which are provided to the District shall be maintained by the District in a locked confidential file, provided, however, that requests from the public for the review of any such information shall be handled in accordance with the District's procedures set forth in Section 11 of the District Administrative Code. (Regulation 2-6-419; MOP Volume II, Part 3, §4.11)
9. Proprietary or trade secret information provided to EPA will be subject to the requirements of 40 CFR Part 2, Subpart B - Public Information, Confidentiality of Business Information. (40 CFR Part 2)
10. The emissions inventory submitted with the application for this Major Facility Review Permit is an estimate of actual emissions for the time period stated and is included only as one means of determining applicable requirements for emission sources. It does not establish, or constitute a basis for establishing, any new emission limitations. (MOP Volume II, Part 3, §4.11)

### **C. Requirement to Pay Fees**

The permit holder shall pay annual fees in accordance with District Regulation 3, including Schedule P. (Regulation 2-6-402 & 409.13, Regulation 3; MOP Volume II, Part 3, §4.12)

### **D. Inspection and Entry**

Access to Facility: The permit holder shall provide reasonable access to the facility and equipment which is subject to this permit to the APCO and/or to his or her designee. (Regulation 1-440, Regulation 2-6-409.3; MOP Volume II, Part 3, §4.14)

### **E. Records**

Notwithstanding the specific wording in any requirement, all records for federally enforceable requirements shall be maintained for at least five years from the date of entry. (Regulation 2-6-501, Regulation 3; MOP Volume II, Part 3, §4.7)

### **F. Monitoring Reports**

Reports of all required monitoring must be submitted to the District at least once every six months, except where an applicable requirement specifies more frequent reporting. The first reporting period for this permit shall be March 22, 2000 to August 31, 2000. The report shall be submitted by September 30, 2000. Subsequent reports shall be for the

## **I. Standard Conditions**

following periods: March 1st through August 31<sup>st</sup> and September 1st through February 28<sup>th</sup> or 29<sup>th</sup>, and are due on the last day of the month after the end of the reporting period. All instances of non-compliance shall be clearly identified in these reports. The reports shall be certified by the responsible official as true, accurate, and complete. In addition, all instances of non-compliance with the permit shall be reported in writing to the District's Compliance and Enforcement Division within 10 calendar days of the discovery of the incident. Within 30 calendar days of the discovery of any incident of non-compliance, the facility shall submit a written report including the probable cause of non-compliance and any corrective or preventative actions. The reports shall be sent to the following address:

Director of Compliance and Enforcement  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, CA 94109  
Attn: Title V Reports

(Regulation 2-6-502, Regulation 3; MOP Volume II, Part 3, §4.7)

## **G. Compliance Certification**

Compliance certifications shall be submitted annually by the responsible official of this facility to the Bay Area Air Quality Management District and to the Environmental Protection Agency. The certification period will be March 1st to February 28<sup>th</sup> or 29<sup>th</sup> of the following year. The certification shall be submitted by March 31<sup>st</sup> of each year. The certification must list each applicable requirement, the compliance status, whether compliance was continuous or intermittent, the method used to determine compliance, and any other specific information required by the permit. The permit holder may satisfy this requirement through submittal of District-generated Compliance Certification forms. The certification should be directed to the District's Compliance and Enforcement Division at the address above, and a copy of the certification should be sent to the Environmental Protection Agency at the following address:

Director of the Air Division  
USEPA, Region IX  
75 Hawthorne Street  
San Francisco, CA 94105  
Attention: Air-3

(MOP Volume II, Part 3, §4.5 and 4.15)

## **H. Emergency Provisions**

1. The permit holder may seek relief from enforcement action in the event of a breakdown, as defined by Regulation 1-208 of the District's Rules and Regulations, by following the procedures contained in Regulations 1-431 and 1-432. The District will thereafter determine whether breakdown relief will be granted in accordance with

## **I. Standard Conditions**

Regulation 1-433. (MOP Volume II, Part 3, §4.8)

2. The permit holder may seek relief from enforcement action for a violation of any of the terms and conditions of this permit caused by conditions beyond the permit holder's reasonable control by applying to the District's Hearing Board for a variance pursuant to Health and Safety Code Section 42350. The Hearing Board will determine after notice and hearing whether variance relief should be granted in accordance with the procedures and standards set forth in Health and Safety Code Section 42350 et seq. Any variance granted by the Hearing Board from any term or condition of this permit, which lasts longer than 90 days will be subject to EPA approval. (MOP Volume II, Part 3, §4.8)
3. Notwithstanding the foregoing, the granting by the District of breakdown relief or the issuance by the Hearing Board of a variance will not provide relief from federal enforcement. (MOP Volume II, Part 3, §4.8)

### **I. Severability**

In the event that any provision of this permit is invalidated by a court or tribunal of competent jurisdiction, or by the Administrator of the EPA, all remaining portions of the permit shall remain in full force and effect. (Regulation 2-6-409.5; MOP Volume II, Part 3, §4.10)

## II. EQUIPMENT

**Table II A - Permitted Sources**

Each of the following sources has been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits.

S-#	Description	Make or Type	Model	Capacity
1	Gas Turbine w/Water Injection, Natural Gas Fired	Allison	501 KB	3,800 KW; 55.1 MMBTU/hr
2	Gas Turbine w/Water Injection, Natural Gas Fired	Allison	501 KB	3,800 KW, 55.1 MMBTU/hr
3	Supplemental Duct Burner, Natural Gas Fired	Coen	GDB-20	20 MMBTU/hr
4	Supplemental Duct Burner, Natural Gas Fired	Coen	GDB-20	20 MMBTU/hr

### III. GENERALLY APPLICABLE REQUIREMENTS

The permit holder shall comply with all applicable requirements, including those specified in the BAAQMD and SIP Rules and Regulations and other federal requirements cited below. These requirements apply in a general manner to the facility and/or to sources exempt from the requirement to obtain a District Permit to Operate. The District has determined that these requirements would not be violated under normal, routine operations, and that no additional periodic monitoring or reporting to demonstrate compliance is warranted. In cases where a requirement, in addition to being generally applicable, is also specifically applicable to one or more sources, the requirement and the source are also included in Section IV, Source-Specific Applicable Requirements, of this permit.

The dates in parenthesis in the Title column identify the versions of the regulations being cited and are, as applicable:

1. BAAQMD regulation(s): The date(s) of adoption or most recent amendment of the regulation by the District Board
2. Any federal requirement, including a version of a District regulation that has been approved into the SIP: The most recent date of EPA approval of any portion of the rule, encompassing all actions on the rule through that date

The full language of SIP requirements is included in Appendix A of this permit if the SIP requirement is different from the current BAAQMD requirement.

**NOTE:**

There are differences between the current BAAQMD rule and the version of the rule in the SIP. For specific information, contact the District's Rule Development Section of the Enforcement Division. All sources must comply with both versions of the rule until US EPA has reviewed and approved (or disapproved) the District's revision of the regulation.

**Table III**  
**Generally Applicable Requirements**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>
BAAQMD Regulation 1	General Provisions and Definitions (10/7/98)	Y
SIP Regulation 1	General Provisions and Definitions (8/27/99)	Y
BAAQMD Regulation 4	Air Pollution Episode Plan (3/20/91)	N
SIP Regulation 4	Air Pollution Episode Plan (8/06/90)	Y

### III. Generally Applicable Requirements

**Table III**  
**Generally Applicable Requirements**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>
BAAQMD Regulation 5	Open Burning (11/2/94)	N
BAAQMD Regulation 6	Particulate Matter and Visible Emissions (12/19/90)	Y
BAAQMD Regulation 7	Odorous Substances (3/17/82)	N
BAAQMD Regulation 8, Rule 1	Organic Compounds - General Provisions (6/15/94)	Y
BAAQMD Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (12/20/95)	Y
BAAQMD Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (12/20/95)	N
SIP Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (3/22/95)	Y
BAAQMD Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (12/20/95)	N
BAAQMD Regulation 11, Rule 2	Hazardous Pollutants - Asbestos Demolition, Renovation and Manufacturing (12/4/91)	Y
BAAQMD Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (7/11/90)	Y

#### IV. SOURCE-SPECIFIC APPLICABLE REQUIREMENTS

The permit holder shall comply with all applicable requirements, including those specified in the BAAQMD and SIP Rules and Regulations and other federal requirements cited below. The requirements cited in the following tables apply in a specific manner to the indicated source(s).

The dates in parenthesis in the Title column identify the versions of the regulations being cited and are, as applicable:

1. BAAQMD regulation(s): The date(s) of adoption or most recent amendment of the regulation by the District Board
2. Any federal requirement, including a version of a District regulation that has been approved into the SIP: The most recent date of EPA approval of any portion of the rule, encompassing all actions on the rule through that date

The full text of each permit condition cited is included in Section VI, Permit Conditions, of this permit. The full language of SIP requirements is included in Appendix A of this permit if the SIP requirements are different from the current BAAQMD requirements. All other text may be found in the regulations themselves.

**Table IV - A**  
**Source-specific Applicable Requirements**  
**S1, S2 – GAS TURBINES W/WATER INJECTION**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
<b>BAAQMD Regulation 6</b>	<b>Particulate Matter and Visible Emissions (12/19/90)</b>		
6-301	Ringelmann #1 Limitation	Y	
6-305	Visible Particles	Y	
6-310	Particulate Weight Limitation	Y	
6-310.3	Heat Transfer Operations	Y	
6-401	Appearance of Emissions	Y	
<b>BAAQMD Regulation 9, Rule 1</b>	<b>Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)</b>		
9-1-301	Limitations on Ground Level Concentrations	N	
9-1-302	General Emissions Limitation	Y	

## IV. Source-Specific Applicable Requirements

**Table IV - A**  
**Source-specific Applicable Requirements**  
**S1, S2 – GAS TURBINES W/WATER INJECTION**

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
<b>BAAQMD Regulation 9, Rule 9</b>	<b>Inorganic Gaseous Pollutants – Nitrogen Oxides from Stationary Gas Turbines (9/21/94)</b>		
9-9-113	Exemption – Inspection and Maintenance Periods	Y	
9-9-114	Exemption – Start-up and Shutdown Periods	Y	
9-9-301	General Emission Limits	Y	
9-9-301.1	Gas Turbines $\geq 0.3$ MW and $<10.0$ MW	Y	
9-9-501	Monitoring and Recordkeeping	Y	
<b>40 CFR Part 60</b>	<b>Standards of Performance for New Stationary Sources (12/23/71)</b>		
Subpart A 60.7	Notification and Recordkeeping	Y	
60.8	Performance Tests	Y	
60.9	Availability of Information	Y	
60.11	Compliance with Standards and Maintenance Requirements	Y	
60.12	Circumvention	Y	
60.13	Monitoring Requirements	Y	
60.13(a)	Continuous monitoring systems	Y	
60.13(b)	Installation deadline	Y	
60.13(e)	Continuous operation	Y	
60.13(f)	Representative measurements	Y	
<b>40 CFR 60 Subpart GG</b>	<b>Standards of Performance for Stationary Gas Turbines (1/27/82)</b>		
60.332	Standard for Nitrogen Oxides	Y	
60.332(a)(2)	NO <sub>x</sub> Emission Standard – Turbines $> 10$ MMBTU/hr and $\leq 100$ MMBTU/hr	Y	
60.333	Standard for Sulfur Dioxide	Y	
60.333(a)	Sulfur Dioxide Emission Standard	Y	
60.333(b)	Fuel Sulfur Limit	Y	
60.334	Monitoring Requirements	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV - A**  
**Source-specific Applicable Requirements**  
**S1, S2 – GAS TURBINES W/WATER INJECTION**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
60.334(a)	Fuel/Water Ratio	Y	
60.334(b)	Fuel Sulfur and Nitrogen Content	Y	
60.334(c)	Excess Emissions	Y	
<b>BAAQMD Cond #14194</b>			
part 1	Fuel Requirement	Y	
part 2	Heat Input Limit	Y	
part 4	NOx Emissions Limit	Y	
part 6	Water Injection System Requirements	Y	
part 7	Fuel Monitoring Requirement	Y	
part 8	Continuous Monitoring System Requirement	Y	
part 9	Annual Source Test Requirement	Y	
part 10	Recordkeeping	Y	
part 11	Reporting	Y	

**Table IV – B**  
**Source-specific Applicable Requirements**  
**S3, S4: DUCT BURNERS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
<b>BAAQMD Regulation 6</b>	<b>Particulate Matter and Visible Emissions (12/19/90)</b>		
6-301	Ringelmann #1 Limitation	Y	
6-305	Visible Particles	Y	
6-310	Particulate Weight Limitation	Y	
6-310.3	Heat Transfer Operations	Y	

#### IV. Source-Specific Applicable Requirements

**Table IV – B**  
**Source-specific Applicable Requirements**  
**S3, S4: DUCT BURNERS**

<b>Applicable Requirement</b>	<b>Regulation Title or Description of Requirement</b>	<b>Federally Enforceable (Y/N)</b>	<b>Future Effective Date</b>
6-401	Appearance of Emissions	Y	
<b>BAAQMD Regulation 9, Rule 1</b>	<b>Inorganic Gaseous Pollutants – Sulfur Dioxide (3/15/95)</b>		
9-1-301	Limitations on Ground Level Concentrations	N	
9-1-302	General Emissions Limitation	Y	
<b>BAAQMD Cond #14194</b>			
part 1	Fuel Requirement	Y	
part 3	Heat Input Limit	Y	
part 5	NOx Emissions Limit	Y	
part 7	Fuel Monitoring Requirement	Y	
part 9	Annual Source Test Requirement	Y	
part 10	Recordkeeping	Y	
part 11	Reporting	Y	

## V. SCHEDULE OF COMPLIANCE

The permit holder shall comply with all applicable requirements cited in this permit. The permit holder shall also comply with applicable requirements that become effective during the term of this permit.

## VI. PERMIT CONDITIONS

Any condition that is preceded by an asterisk is not federally enforceable.

**Condition #14194 for:**

S1, Gas Turbine with water injection  
S2, Gas Turbine with water injection  
S3, Supplemental Duct Burner  
S4, Supplemental Duct Burner

Conditions:

1. All combustion sources at this facility shall be fired exclusively with California Public Utilities Commission (PUC) quality natural gas. (basis: BACT, 40 CFR 60.333)
2. Heat input for each turbine, S1 and S2, is limited to 55.1 MMBTU/hr. (basis: Cumulative Increase)
3. Heat input for each supplemental duct burner, S3 and S4, is limited to 13.5 MMBTU/hr. (basis: Cumulative Increase)
4. NOx emissions from each turbine, S1 or S2, shall not exceed 42 ppm, by volume in the exhaust, measured at 15% oxygen (dry basis), except during startup and shutdown. (basis: Regulation 9-9-301.1)
5. NOx emissions from each turbine-supplemental duct burner combination, S1/S3 or S2/S4, shall not exceed 42 ppm by volume in the exhaust, measured at 15% oxygen (dry basis). The supplemental burners shall not operate during startup or shutdown. (basis: Regulation 9-9-301.1)

## VI. Permit Conditions

**Condition #14194 for:**

S1, Gas Turbine with water injection

S2, Gas Turbine with water injection

S3, Supplemental Duct Burner

S4, Supplemental Duct Burner

6. NOx emissions from each turbine shall be controlled at all times by water injection except during startup and shutdown. Water-to-fuel ratio shall be maintained in the range of 57% to 62% (weight basis) during all periods of operation. (basis: BACT)
7. In order to demonstrate compliance with Conditions #2 and #3, the owner/operator of the Gas Turbines and Supplemental Duct Burners shall install and operate approved continuous fuel meters to monitor and record the amount of fuel heat input to each turbine and duct burner. (basis: Cumulative Increase)
8. In order to demonstrate compliance with Condition #6, the owner/operator of the Gas Turbines shall install and operate an approved continuous monitoring system to monitor and record the ratio of water-to-fuel being fired in each turbine. (basis: 40 CFR 60.334)
9. In order to demonstrate compliance with NOx limits of Conditions #4 and #5, the owner/operator of the Gas Turbines S1 and S2 and the Supplemental Duct Burners S3 and S4 shall conduct annual source testing of each turbine (S1, S2) and each turbine-supplemental duct burner combination (S1/S3, S2/S4). (basis: Regulation 9-9-301.1)  
  
All source testing shall be performed in accordance with the District's Manual of Procedures. The facility shall obtain prior approval from the District's Source Test Manager for the location of sampling ports and source testing procedures. All source test results shall be delivered to the District within 30 days of the date of the test. The time interval between source testing shall not exceed 15 months.
10. The owner/operator of the Gas Turbines S1 and S2 and the Supplemental Duct Burners S3 and S4 shall keep records of the operation of this equipment as follows: (basis: Cumulative Increase, 40 CFR 60.334)

## VI. Permit Conditions

**Condition #14194 for:**

S1, Gas Turbine with water injection

S2, Gas Turbine with water injection

S3, Supplemental Duct Burner

S4, Supplemental Duct Burner

- a. hours of operation of each turbine and supplemental burner
- b. monthly summary of fuel usage at each turbine and supplemental burner
- c. average fuel to water ratio at each turbine for each 24 hour period that the turbines are in operation

11. The owner/operator of the Gas Turbines S1 and S2 shall submit an excess emissions and monitoring systems performance report to the District and the U.S. Environmental Protection Agency on a semiannual basis. These reports shall be postmarked by the 30th day Following the end of each calendar half and shall Include the following: (basis: 40 CFR 60.7(c))

- a. the hours of operation of each turbine during the reporting period
- b. each one-hour period during which the average water-to-fuel ratio falls out of the range specified in Condition #6
- c. the date and time identifying each period during which the continuous monitoring system was inoperative and the nature of the system repairs or adjustments
- d. the average fuel consumption and turbine load conditions for each period when the water-to-fuel ratio was out of the specified range or the continuous monitoring system was inoperative

Respective reports to the District and the EPA shall be addressed as follows:

Director of Compliance and Enforcement  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, CA 94109  
Attn: Title V Reports

Director of the Air Division  
USEPA, Region IX  
75 Hawthorne Street  
San Francisco, CA 94105  
Attn: Air-3

## VII. APPLICABLE LIMITS & COMPLIANCE MONITORING REQUIREMENTS

This section has been included only to summarize the applicable emission limits contained in Section IV, Source-Specific Applicable Requirements, of this permit. The following tables show the relationship between each emission limit and the associated compliance monitoring provisions, if any. The monitoring frequency indicates whether periodic (P) or continuous (C) monitoring is required. For periodic monitoring, the frequency of the monitoring has also been shown, either annual (A), quarterly (Q), monthly (M), weekly (W), daily (D), or on an event basis (E). No monitoring (N) has been required if the current applicable rule or regulation does not require monitoring, and the operation is unlikely to deviate from the applicable emission limit based upon the nature of the operation.

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S1, S2 – GAS TURBINES W/WATER INJECTION**

Type of limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
PM	BAAQM D Regulation 6-301	Y		Ringelmann 1.0		N	
	BAAQM D Regulation 6-310	Y		0.15 gr/dscf @ 6% O <sub>2</sub>		N	
NO <sub>x</sub>	BAAQM D 9-9-301.1	Y		42 ppmv @ 15% O <sub>2</sub> (dry)	Condition #14194, part 9	P/A	Source test
	NSPS Subpart GG 60.332 (a)(2)	Y		141 ppmv @ 15% O <sub>2</sub> (dry)	NSPS Subpart GG 60.334(a)	C	Water-to-fuel ratio

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S1, S2 – GAS TURBINES W/WATER INJECTION**

Type of limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
	Condition #14194, part 4	Y		42 ppmv @ 15% O <sub>2</sub> (dry), each turbine (except during startup and shutdown)	Condition #14194, part 9	P/A	Source test

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S1, S2 – GAS TURBINES W/WATER INJECTION**

Type of limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
NOX	Condition #14194, part 5	Y		42 ppmv @ 15% O <sub>2</sub> (dry), each turbine/supplemental burner combination	Condition #14194, part 9	P/A	Source test
SO2	BAAQM D 9-1-301	Y		Ground level concentrations: 0.5 ppm for 3 consecutive minutes, 0.25 ppm averaged over 60 consecutive minutes, 0.05 ppm averaged over 24 hours		N	
	BAAQM D 9-1-302	Y		300 ppm (dry) general emission limitation		N	
	40 CFR 60 Subpart GG 60.333 (b)	Y		0.8% (wt) fuel sulfur content	Monitoring requirement subsumed by BAAQMD condition #14194, part 1. See Permit Shield.	N	
Fuel Usage	BAAQM D Condition #14194 part 2	Y		55.1 MMBTU/hr heat input (each turbine)	BAAQMD Condition #14194 part 7	C	Continuous Fuel Usage Monitors

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – A**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S1, S2 – GAS TURBINES W/WATER INJECTION**

Type of limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Water-to-Fuel Ratio	BAAQM D Condition #14194 part 6	Y		Water-to-Fuel Ratio: 57% to 62% (wt)	BAAQMD Condition #14194 part 7	C	Continuous Water-to-Fuel Ratio

**Table VII – B**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S3, S4: DUCT BURNERS**

Type of limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
PM	BAAQM D Regulation 6-301	Y		Ringelmann 1.0		N	
	BAAQM D Regulation 6-310.3	Y		0.15 gr/dscf @ 6% O <sub>2</sub>		N	
NO <sub>x</sub>	Condition #14194, part 5	Y		42 ppmv @ 15% O <sub>2</sub> (dry), each turbine/supplemental burner combination	Condition #14194, part 9	P/A	Source test

## VII. Applicable Limits and Compliance Monitoring Requirements

**Table VII – B**  
**Applicable Limits and Compliance Monitoring Requirements**  
**S3, S4: DUCT BURNERS**

Type of limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
SO2	BAAQMD Regulation 9-1-301	Y		Ground Level Concentrations: 0.5 ppm for 3 consecutive minutes, 0.25 ppm averaged over 60 consecutive minutes, 0.05 ppm averaged over 24 hours		N	
	BAAQMD Regulation 9-1-302	Y		300 ppm (dry) general emission limitation		N	
Fuel Usage	BAAQMD Condition #14194 part 3	Y		13.5 MMBTU/hr heat input (each duct burner)	BAAQMD Condition #14194 part 7	C	Continuous Fuel Usage Monitors

## VIII. TEST METHODS

The test methods associated with the emission limit of a District regulation are generally referenced in Section 600 of the regulation. The following table indicates only the test methods associated with the emission limits referenced in Section VII, Applicable Emission Limits & Compliance Monitoring Requirements, of this permit.

**Table VIII**  
**Test Methods**

<b>Applicable Requirement</b>	<b>Description of Requirement</b>	<b>Acceptable Test Methods</b>
BAAQMD 6-301	Ringelmann No. 1 Limitation	Manual of Procedures, Volume I, Evaluation of Visible Emissions
BAAQMD 6-310	Particulate Weight Limitation	Manual of Procedures, Volume IV, ST-15, Particulates Sampling
BAAQMD 9-1-302	General Emission Limitation	Manual of Procedures, Volume IV, ST-19A, Sulfur Dioxide, Continuous Sampling, or ST-19B, Total Sulfur Oxides Integrated Sample
BAAQMD 9-9-301.1	Emission Limit, NO <sub>x</sub> , Turbines Rated $\geq 0.3$ MW to <10 MW	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling
BAAQMD Cond. #14194, part 4, part 5	Emission Limit, NO <sub>x</sub> , Gas Turbines, Gas Turbines w/Duct Burners	Manual of Procedures, Volume IV, ST-13A, Oxides of Nitrogen, Continuous Sampling and ST-14, Oxygen, Continuous Sampling
40 CFR 60 Subpart GG 60.332(a)(2)	Performance Standard, NO <sub>x</sub>	EPA Method 20, Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines
40 CFR 60 Subpart GG 60.333(a)	SO <sub>2</sub> Volumetric Emission Limit	EPA Method 20, Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions from Stationary Gas Turbines
40 CFR 60 Subpart GG 60.333(b)	Fuel Sulfur Limit (gaseous fuel)	ASTM D 1072-80, Standard Method for Total Sulfur in Fuel Gases; and/or ASTM D 3031-81, Standard Test Method for Total Sulfur in Natural Gas by Hydrogenation

## IX. PERMIT SHIELD

### A. Non-applicable Requirements

None.

### B. Subsumed Requirements

Pursuant to District Regulations 2-6-233 and 2-6-409.12, as of the date this permit is issued, the federally enforceable “subsumed” regulations and/or standards cited in the following table are not applicable to the source or group of sources identified at the top of the table. The District has determined that compliance with the “streamlined” requirements listed below and elsewhere in this permit will assure compliance with the substantive requirements of the “subsumed” regulations and/or standards. Enforcement actions and litigation may not be initiated against the source or group of sources covered by this shield based on the “subsumed” regulatory and/or statutory provisions cited.

**Table IX B - 1**  
**Permit Shield for Subsumed Requirements**  
**S1, S2 – GAS TURBINES W/WATER INJECTION**

<b>Subsumed Requirement Citation</b>	<b>Title or Description</b>	<b>Streamlined Requirements</b>	<b>Title or Description</b>
<b>NSPS Subpart GG</b>	<b>Standards of Performance for Stationary Gas Turbines</b>		
60.334 (b)(2)	Fuel Sulfur and Nitrogen Content monitoring (natural gas)	BAAQMD Condition #14194, part 1	Requirement for use of PUC quality natural gas
60.334 (c)(2)	Periods of excess emissions, SO <sub>2</sub> , natural gas	BAAQMD Condition #14194, part 1	Requirement for use of PUC quality natural gas

## **X. GLOSSARY**

### **BAAQMD**

Bay Area Air Quality Management District

### **BACT**

Best Available Control Technology

### **CAA**

The federal Clean Air Act

### **CAAQS**

California Ambient Air Quality Standards

### **CEQA**

California Environmental Quality Act

### **CFR**

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

### **CO**

Carbon Monoxide

### **Cumulative Increase**

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Used to determine whether threshold-based requirements are triggered.

### **District**

The Bay Area Air Quality Management District

### **EPA**

The federal Environmental Protection Agency.

### **Excluded**

Not subject to any District Regulations.

## **X. Glossary**

### **FE, Federally Enforceable**

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60, (NSPS), Part 61, (NESHAPs), Part 63 (HAP), and Part 72 (Permits Regulation, Acid Rain), and also including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

### **HAP**

Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by both 40 CFR Part 63, and District Regulation 2, Rule 5.

### **Major Facility**

A facility with potential emissions of regulated air pollutants greater than or equal to 100 tons per year, greater than or equal to 10 tons per year of any single hazardous air pollutant, and/or greater than or equal to 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity as determined by the EPA administrator.

### **MFR**

Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Act and implemented by District Regulation 2, Rule 6.

### **MOP**

The District's Manual of Procedures.

### **NAAQS**

National Ambient Air Quality Standards

### **NESHAPs**

National Emission Standards for Hazardous Air Pollutants. Contained in 40 CFR Part 61.

### **NMHC**

Non-methane Hydrocarbons

### **NO<sub>x</sub>**

Oxides of nitrogen.

### **NSPS**

Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Act, and implemented by both 40 CFR Part 60 and District Regulation 10.

## **X. Glossary**

### **NSR**

New Source Review. A federal program for pre-construction review and permitting of new and modified sources of air pollutants for which the District is classified "non-attainment". Mandated by Title I of the Clean Air Act and implemented by 40 CFR Parts 51 and 52 as well as District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

### **Offset Requirement**

A New Source Review requirement to provide federally enforceable emission offsets at a specified ratio for the emissions from a new or modified source and any pre-existing cumulative increase minus any onsite contemporaneous emission reduction credits. Applies to emissions of POC, NO<sub>x</sub>, PM<sub>10</sub>, and SO<sub>2</sub>.

### **Phase II Acid Rain Facility**

A facility that generates electricity for sale through fossil-fuel combustion and by virtue of certain other characteristics (defined in Regulation 2, Rule 6) is subject to Titles IV and V of the Clean Air Act.

### **POC**

Precursor Organic Compounds

### **PM**

Total Particulate Matter

### **PM<sub>10</sub>**

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

### **PSD**

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

### **SIP**

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

### **SO<sub>2</sub>**

Sulfur dioxide

## **X. Glossary**

### **Title V**

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

### **TSP**

Total Suspended Particulate

### **VOC**

Volatile Organic Compounds

### **Units of Measure:**

bhp	=	brake-horsepower
btu	=	British Thermal Unit
g	=	grams
gal	=	gallon
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m <sup>2</sup>	=	square meter
min	=	minute
mm	=	million
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute
yr	=	year

## **XI. APPLICABLE STATE IMPLEMENTATION PLAN**

See Attachments